



AC 65-5B

U.S. Department
of Transportation
**Federal Aviation
Administration**

PARACHUTE RIGGER SENIOR/MASTER CERTIFICATION GUIDE

**REVISED
1988**

**U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION**

PARACHUTE RIGGER SENIOR/MASTER CERTIFICATION GUIDE

**U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION**

**FM FLIGHT STANDARDS DISTRICT OFFICES
(CONTINUED)**

WASHINGTON

**FSDO 61
7300 Perimeter Road South
Seattle, WA 98108
Phone: (206) 431-2742**

**FSDO 61A
5620 East Rutter Avenue
Spokane, WA 99206
Phone: (509) 4564618**

**FM FLIGHT STANDARDS DISTRICT OFFICES
(CONTINUED)**

FSDO 66
International Airport
Route 3, Box 51
Lubbock, TX 79401
Phone: (806) 762-0335

FSDO 68
10100 Reunion
Suite 200
San Antonio, TX 78216
Phone: (512) 3414371

FSDO 68SA
Miller International Airport
Terminal Building
2600 South Main Street
McAllen, TX 78503
Phone: (512) 6824812

UTAH

FSDO 67
116 North 2400 West
Salt Lake City, UT 84116
Phone: (801) 5244247

VERMONT

FSDO 65
Portland International Jetport
General Aviation Terminal
Portland, ME 04102
Phone: (207) 7744484

VIRGINIA

FSDO 21
Byrd International Airport
Terminal Building, Second Floor
Sandston, VA 23150
Phone: (804) 222-7494

VIRGIN ISLANDS

FSDO 61
Puerto Rico International Airport
Room 203A
San Juan, PR 00913
Phone: (809) 791-5050

PREFACE

This guide was prepared by the Federal Aviation Administration (FAA) to provide information to persons interested in becoming certificated parachute riggers. This guide provides information on how to apply for a parachute rigger certificate and ratings, and assists the applicant in preparing for the written, oral, and practical tests.

The requirements for parachute rigger certificates and ratings, and the privileges and performance standards for certificated parachute riggers are prescribed in Federal Aviation Regulation (FAR) Part 65, Certification: Airmen Other Than Flight Crewmembers. Any person who applies and meets the requirements is entitled to a parachute rigger certificate. Briefly, the requirements are concerned with age, language ability, experience, knowledge, and skill.

The various sections in this guide explain the procedures for either substantiating or demonstrating that each requirement has been met. The sections that deal with the written test (to demonstrate knowledge) and the oral and practical tests (to demonstrate skill) describes the type of tests used and what they contain.

Comments regarding this publication should be directed to the:

FAA
Aviation Standards National Field Office
Airworthiness Section, AVN-133
P.O. Box 25082
Oklahoma City, OK 73125

**FM FLIGHT STANDARDS DISTRICT OFFICES
(CONTINUED)**

RHODEISLAND

FSDO 63
Barnes Municipal Airport
Administration Building
Westfield, MA 01085
Phone: (413) 5683121

SOUTHCAROLINA

FSDO 66C
Columbia Metropolitan Airport
2819 Aviation Way
West Columbia, SC 29169
Phone: (803) 765-5931

SOUTHDAKOTA

FSDO 66
RapidCity Regional Airport
Rural Route 2, Box 4750
Rapid City, SD 57701
Phone: (605) 343-2403

TENNESSEE

FSDO 63
International Airport
General Aviation Building, Room 137
2488 Winchester Road
Memphis, TN 38116
Phone: (901) 5213820

FSDO 63N
Nashville Metropolitan Airport
Room 101
322 Knapp Boulevard
Nashville, TN 37217
Phone: (615) 251-5661

TEXAS

FSDO 63
Love Field Airport
8032 Aviation Place
Dallas, TX 75235
Phone: (214) 357-0142

FSDO 64
Hobby Airport
Room 152
8800 Paul B. Koonce Drive
Houston, TX 77061
Phone: (713) 6436504

FAA FLIGHT STANDARDS DISTRICT OFFICES
(CONTINUED)

CONTENTS

FSDO 64A
 Mahlon-Sweet Airport
 90606 Greenhill Road
 Eugene, OR 97402
 Phone: (503) 688-9721

PENNSYLVANIA

FSDO 5
 Allentown-Bethlehem-Easton Airport
 RAS Aviation Center Building
 Allentown, PA 18103
 Phone: (215) 264-2888

FSDO 13
 Capitol City Airport
 Administration Building
 Room 201
 New Cumberland, PA 17070
 Phone: (717) 782-4528

FSCQ 3
 Allegheny County Airport
 Administration Building
 Room 213
 West Mifflin, PA 15122
 Phone: (412) 462-5507

FSDO 17
 Scott Plaza No. 2
 Fourth Floor
 Philadelphia, PA 19113
 Phone: (215) 596-0673

FSDO 19
 Airport Office Park
 Building 3
 420 Rouser Rd.
 Coraopolis, PA 15108
 Phone: (412) 644-5406

PUERTO RICO

FSDO 61
 Puerto Rico International Airport
 Room 203A
 San Juan, PR 00913
 Phone: (809) 791-5050

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**FAA FLIGHT STANDARDS DISTRICT OFFICES
(CONTINUED)**

FSDO 66R
Raleigh-Durham Terminal B
Route 1, Box 486A
Morrisville, NC 27560
Phone: (919) 7554240

NORTH DAKOTA

FSDO 64
Hector Airport
Administration Building, Room 216
P.O. Box 54%
Fargo, ND 58105
Phone: (701) 232-8949

OHIO

FSDO 62
4242 Airport Road
Lunken Airport Executive Building
Cincinnati, OH 45226
Phone: (513) 533-8110

FSDO 65
Cleveland Hopkins International Airport
Federal Facilities Office Building
Cleveland, OH 44135
Phone: (216) 267-0220

FSDO 62C
Port Columbus International Airport
Lane Aviation Building, Room 234
4393 East 17 Avenue
Columbus, OH 43219
Phone: (614) 469-7476

OKLAHOMA

FSW 67
Wiley Post Airport
FAA Building, Room 111
Bethany, OK 73008
Phone: (405) 789-5220

OREGON

FSDO 64
Portland-Hillsboro Airport
3355 N.E. Cornell Road
Hillsboro, OR 97124
Phone: (503) 221-2104

**FM FLIGHT STANDARDS DISTRICT OFFICES
(CONTINUED)**

NEW JERSEY

FSDD 25
Teterboro Airport
150 Riser Road
Teterboro, NJ 07608
Phone: (201) 288-1745

NEW MEXICO

FSDO 61
2402 Kirtland Drive, SE.
Albuquerque, NM 87106
Phone: (505) 247-0156

NEW YORK

FSDO 1
Albany County Airport
CFR & M Building
Albany, NY 12211
Phone: (518) 869-8482

FSDO 11
Republic Airport
Administration Building
Farmingdale, NY 11735
Phone: (516) 694-5530

FSW 23
Rochester Monroe County Airport
1295 Scottsville Road
Rochester, NY 14624
Phone: (716) 263-5880

NORTH CAROLINA

FSDO 66W
Smith Reynolds Airport
Terminal Building
Second Floor
Winston Salem, NC 27105
Phone: (919) 761-3147

FSDO 66C
Douglas Municipal Airport
FAA Building
5318 Morns Field Drive
Charlotte, NC 28208
Phone: (704) 392-3214

**PARACHUTE RIGGER CERTIFICATES
AND RATINGS**

Certificates and Ratings

FAR Part 65. Certification: Airmen Other Than Flight Crewmembers, provides for the issuance of two parachute rigger certificates: (1) senior parachute rigger and (2) master parachute rigger. FAR Part 65 also provides for four type ratings: (1) seat, (2) back, (3) chest, and (4) lap. Each senior parachute rigger applicant must meet the requirements for at least one rating, and each master parachute rigger applicant must meet the requirements for at least two ratings to be issued a certificate. Parachute riggers may exercise their privileges only on parachutes for which they are rated. Parachute rigger certificate eligibility requirements vary with the type of certificate sought (senior or master) and the applicant's background (military or civil).

General Requirements

FAR Section 65.113 states:

- (a) To be eligible for a parachute rigger certificate, a person must-
 - (1) Be at least 18 years of age;
 - (2) Be able to read, write, speak, and understand the English language, or in the case of a citizen of Puerto Rico, or a person who is employed outside of the United States by a U.S. air carrier, and who does not meet this requirement, be issued a certificate that is valid only in Puerto Rico or while he/she is employed outside of the United States by that air carrier, as the case may be; and
 - (3) Comply with the sections of this subpart that apply to the certificate and type rating he/she seeks.

Experience Requirements

FAR Section 65.115 provides that applicants for a senior parachute rigger certificate must have packed at least 20 parachutes of each type for which a rating is sought. The parachute must have been packed in accordance with the manufacturer's instructions and under the supervision of a certificated parachute rigger who holds a **rating** for that type or by a person holding an appropriate military rating.

Applicants for a master parachute rigger certificate must have had at least 3 years of experience as a parachute rigger and have satisfactorily packed at least 100 parachutes of each of two types in common use, in accordance with the manufacturer's instructions.

Knowledge and Skill Requirements

FAR Section 65.115 provides that senior parachute rigger applicants are required to take a written test. They are also required to take an oral and **practical test after passing** the written test. Military parachute riggers, former military parachute riggers, and civilian employees of a regular armed force who meet the regulatory requirements **may** take a special written test on the regulations of FAR Part 65, Subpart F. Evidence to **establish their eligibility under this special certification** rule (FAR Section 65.117) may be submitted in the form of letters, official records, or other documents, within 12 months after discharge.

Master parachute rigger applicants are required to take a written test unless they hold a senior parachute rigger **certificate. They are also required to take an oral and practical test, which may be taken after showing they meet the other requirements.**

FM FLIGHT STANDARDS DISTRICT OFFICES (CONTINUED)

FSDO 63
Kansas City International Airport
525 Mexico City Avenue
Kansas City, MO 64153
Phone: (816) 243-3800

MONTANA

FSDO 65
Helena Airport
FAA Building, Room 3
Helena, MT- 59601
Phone: (406) 449-5270

FSDO 65A
Billings Logan International Airport
Administration Building, Room 216
Billings, MT 59101
Phone: (406) 2456179

NEBRASKA

FSDO 65
Lincoln Municipal Airport
General Aviation Building
Lincoln, NE 68524
Phone: (402) 471-5485

NEVADA

FSDO 6
241 East Reno Avenue
Suite 200
Las Vegas, NV 89119
Phone: (702) 3886482

FSDO 11
601 South Rock Boulevard
Suite 102
Reno, NV 89502
Phone: (702) 784-5321

NEW HAMPSHIRE

FSDO 65
Portland International Jetport
General Aviation Terminal
Portland, ME 04102
Phone: (207) 7744484

**FAA FLIGHT STANDARDS DISTRICT OFFICES
(CONTINUED)**

MASSACHUSETTS

FSDO 61
Civil Air Terminal Building
Second Floor
Hanscome Field
Bedford, MA 01730
Phone: (617) 273-7231

FSDO 63
Barnes Municipal Airport
Administration Building
Westfield, MA 01085
Phone: (413) 568-3121

MICHIGAN

GADO 8
Kent County International Airport
5500 44th Street, S.E.
Grand Rapids, MI 49508
Phone: (616) 456-2427

FSDO 63
Willow Run Airport
8800 Beck Road
Belleville, MI 48111
Phone: (313) 485-2550

MINNESOTA

GADO 14
Minneapolis-St. Paul International Airport
Room 201
6201 34th Avenue South
Minneapolis, MN 55450
Phone: (612) 725-3341

MISSISSIPPI

FSDO 63J
Jackson Municipal Airport
FAA Building
P.O. Box 6273, Pearl Branch
Jackson, MS 39208
Phone: (601) 960-4633

MISSOURI

FSDO 62
FAA Building
9275 Genaire Drive
Berkeley, MO 63134
Phone: (314) 731-2006

Certificate Privileges

A **certificated** senior parachute **rigger** may pack or maintain (except for major repairs and alterations) any type of parachute for which he/she is rated. He/she may also supervise other persons in packing any type of parachute for which he/she is rated. A certificated master parachute rigger may pack, maintain, or alter any type of parachute for which he/she is rated. Additionally, he/she may supervise other persons in packing, maintaining, or altering any type of parachute for which he/she is rated.

Since regulations are amended from **time** to time, you should check with the local FAA office to ascertain the currency of referenced regulations.

APPLICATION PROCEDURES

FAA FLIGHT STANDARDS DISTRICT OFFICES (CONTINUED)

How to Apply

Contact the nearest General Aviation District Office (GADO), Flight Standards District Office (FSDO), or International Field Office (IFO) for an appointment to have your experience evaluated. An FAA inspector will determine if you are eligible to take the tests. This evaluation is necessary when applying for an original certificate, or when adding a rating. FAA district office addresses are listed in the appendix.

When appearing for evaluation, bring your records and any other evidence you have to substantiate your experience. Letters from present or former employers, military service records, business records, log books, etc., are acceptable as long as the inspector who reviews it is able to determine that the type and amount of experience meets the regulatory requirements.

The evidence of packing experience must contain the following information:

1. Name of the person who did the packing.
2. Type and number of parachutes packed.
3. Packing dates.
4. A statement that the parachutes were packed under the supervision of a certificated and appropriately rated parachute rigger or a person holding an appropriate military rating, including the name, certificate number, and ratings of the person who supervised the packing.

When the FAA inspector determines that you meet the general and experience requirements, you will be required to complete FAA Form 8610-2, Airman Certificate and/or Rating Application, in duplicate. The FAA inspector will endorse the form and return both copies to you. The FAA inspector will issue FAA Form 8060-7, Airman's Authorization for Written Test, for presentation to an appropriately rated written test examiner. If there is sufficient time, you may be permitted to take the written test that same day, or you may take the written test at a later date.

IOWA

FSDO 61
3021 Army Post Road
Des Moines, IA 50321
Phone: (515) 285-9895

KANSAS

FSDO 64
Mid Continent Airport
Flight Standards Building
Wichita, KS 67209
Phone: (316) 926-4462

KENTUCKY

FSDO 68
Bowman Field
FAA Building
Louisville, KY 40205
Phone: (502) 582-6116

LOUISIANA

FSDO 62
Ryan Airport
9191 Plank Road
Baton Rouge, LA 70811
Phone: (504) 356-5701

MAINE

FSDO 65
Portland International Jetport
General Aviation Terminal
Portland, ME 04102
Phone: (207) 774-4484

MARYLAND

FSDO 7
Baltimore-Washington
International Airport
North Administration Building
Elm Road
Baltimore, MD 21240
Phone: (301) 859-5780

**FM FLIGHT STANDARDS DISTRICT OFFICES
(CONTINUED)**

THE WRITTEN TESTS

GEORGIA

FSDO 67
3420 Norman Berry Drive
Suite 430
College Park, GA 30354
Phone: (404) 763-7265

HAWAII

FSDO 13
90 Nakolo Place
Room 215
Honolulu, HI 96819
Phone: (808) 836-0615

IDAHO

FSW 67A
Boise Airport
3975 Rickenbacker Street
Boise, ID 83705
Phone: (208) 334-1238

ILLINOIS

GADO 3
DuPage County Airport
P.O. Box H
West Chicago, IL 60185
Phone: (312) 3774516

GADO 19
Capitol Airport
No. 3 North Airport Drive
North Quadrant
Springfield, IL 62708
Phone: (217) 4924238

INDIANA

GADO 10
Indianapolis International Airport
6801 Pierson Drive
Indianapolis, IN 46241
Phone: (317) 247-2491

GADO 18
Michiana Regional Airport
1843 Commerce Drive
South Bend, IN 46628
Phone: (219) 236-8480

Taking the Written Test

The written test may be taken at FSDO's, GADO's, and IFO's or from appropriately rated written test examiners. *ACDO's have no provision for administering parachute rigger written tests.* FSDO's may administer written tests at other locations by prior arrangement. It is recommended that an appointment be made before the intended date of testing so that the appropriate personnel will be on hand to give the tests and to assure that space is available.

You must begin the test early enough to complete it within the time allotted and before office closing time. One hour is allowed for taking the Senior Parachute Rigger—Military Competence written test. The Senior Parachute Rigger-Military Competence written test must be administered by an FAA airworthiness inspector. Two hours each are allowed for the Senior Parachute Rigger and Master Parachute Rigger written tests. If you have not had your experience evaluated at an earlier date, arrive at the office early enough to allow additional time for the determination to be made.

When eligibility to take the test is confirmed, an application form, a test booklet, and all the materials necessary to take the test will be issued. You are not required to furnish any test or reference material, nor permitted to use or take notes during the tests.

Before you begin the written test, you will be asked to show personal identification and to provide certain information on the application form. This information is necessary to match your answer sheet with your application form so your scores can be accurately reported. Prior to filling in any part of the application form, read the instructions carefully, then fill in the form. Everything should be printed except your signature, which should be written just as you would sign a business letter.

Make certain you completely understand the instructions for taking the test and how to mark the special answer sheet, as it will be machine scored. If more than one answer to a question is marked, or no answer is marked, the question will be scored as incorrect. Stray marks on the sheet may also cause the questions to be scored as incorrect.

When taking the test, always keep the following facts in mind:

- (1) There are no "trick" questions. Each statement means exactly what it says. Do not look for hidden meanings. The statement does not concern *exceptions* to the rule; it refers to the *general* rub.
- (2) Be sure you read the entire question carefully before looking at the answers; avoid hasty assumptions. This can lead to a completely erroneous approach to the problem or failure to consider vital words. Then look through the list of alternative answers and find the one that best answers the question.
- (3) Only one of the answers is completely correct. The others may be answers that result from using the incorrect procedures, from wrong interpretations of the question, or from *misconceptions* about the subject matter. Understand the question and then select the alternative you consider to be the best answer.
- (4) If you find that you have considerable difficulty with a question, do not spend too much time on it, but go on to the next question. When you have completed the test, go back to the questions which you have passed over. This procedure will enable you to use the time available to the best advantage in demonstrating your knowledge and understanding of the subject. Be sure you mark an answer for each question.

FAA FLIGHT STANDARDS DISTRICT OFFICES (CONTINUED)

COLORADO

FSDO 60
10455 East 25th Avenue
Suite 202
Aurora, CO 80010
Phone: (303) 3405400

CONNECTICUT

FSDO 63
Barnes Municipal Airport
Administration Building, First Floor
Westfield, MA 01085
Phone: (413) 5683121

DELAWARE

FSDO 17
Scott Plaza No. 2
Fourth Floor
Philadelphia, PA 19113
Phone: (215) 596-0673

DISTRICT OF COLUMBIA

FSDO 27
Dulles International Airport
600 West Service Road
Chantilly, VA 20041
Phone: (202) 557-5360

FLORIDA

FSDO 64
St. Petersburg-Clearwater Airport
Terminal Building, West Wing
Clearwater, FL 33520
Phone: (813) 531-1434

FSDO 65
Miami International Airport
Perimeter Road and N.W. 20th Street
FAA Building 3050
P.O. Box 592015
Miami, FL 33159
Phone: (305) 526-2572

FSDO 64J
Craig Municipal Airport
FAA Building
855 St. John's Bluff Road
Jacksonville, FL 32211
Phone: (904) 641-7311

**FM FLIGHT STANDARDS DISTRICT OFFICES
(CONTINUED)**

FSDO 2

San Jose Municipal Airport
1387 Airport Boulevard
San Jose, CA 95110
Phone: (408) 291-7681

FSDO 4

Fresno Air Terminal
Suite 110
4955 East Anderson
Fresno, CA 93727
Phone: (209) 487-5306

FSDO 5

Long Beach Airport
2815 East Spring Street
Long Beach, CA 90806
Phone: (213) 4267134

FSDO 8

Riverside Municipal Airport
6961 Flight Road
Riverside, CA 92504
Phone: (714) 3516701

FSDO 9

Montgomery Field Airport
Suite 110
8665 Gibbs Drive
San Diego, CA 92123
Phone: (619) 293-5281

FSDO 10

5885 West Imperial Highway
Los Angeles, CA 90045
Phone: (213) 215-2150

FSDO 12

Sacramento Executive Airport
6107 Freeport Boulevard
Sacramento, CA 95822
Phone: (916) 551-1721

FSDO 14

Oakland International Airport
Earhart Road, Building L-105
P.O. Box 2397, Airport Station
Oakland, CA 94614
Phone: (415) 273-7155

Scoring the Test

If you qualify under the **special certification** rule for military parachute **riggers** or former military parachute riggers, the test administered to you is graded in the FAA district **office** where the test is taken. If you pass the test, you will be issued FAA Form **8060-4**, Temporary Airman Certificate, since no oral or **practical** test is required. If a passing grade of 70 percent is not obtained.

All other parachute **rigger** written tests are mailed to the FAA in Oklahoma City, Oklahoma where they are scored by electronic test-scoring machines. Strict procedures are followed to **insure** the accuracy of scoring.

Reporting Scores

Test results **will** be mailed to you as quickly as possible. The test grade is reported on AC Form 8080-2, **Airman** Written Test Report. AC Form 8080-2 is acceptable evidence of having passed the written test and must be presented when applying for a certificate. It must also be presented when applying for retesting in the event of failure.

In addition to grade information, the written test report provides a listing by question number of the questions which were answered incorrectly. The subject area codes correspond to the subject headings shown on the "Written Test Subject Outline," which is mailed along with AC Form 8080-2, and to the written test subject headings used in this guide.

If your AC Form 8080-2 is lost or destroyed, a duplicate copy may be obtained by sending your name, social security number, the title of the test, the location where the test was taken, the approximate date of the test, and \$1.00 (money order or check payable to FAA) to:

FAA

Airman Certification Branch, AAC-260
P.O. Box 25082
Oklahoma City, OK 73125



Applying for a Retest

If you fail a parachute rigger test, you must wait 30 days to retake the test; or, if you desire to take the test sooner, you must present a statement from a certificated and appropriately rated parachute rigger or a person holding an appropriate military rating, certifying that he/she has given you additional instruction in each of the subjects failed and now considers you ready for retesting.

Written Test Subjects

The subjects covered by the parachute rigger written tests are outlined below. The special test administered to military or former military riggers deals only with the first two categories, Certification and Privileges, Limitations, and Operating Rules. All other applicants for a senior parachute rigger written test should be prepared to answer questions in all subject areas listed except the last category, Parachute Alteration. Master parachute rigger applicants will be asked questions in all subject areas.

A. CERTIFICATION

- A01 -Experience requirements.
- A02 —Skill requirements.
- A03 —Type ratings.
- A04 -Test requirements.
- A05 —Adding type ratings.

B. PRIVILEGES, LIMITATIONS, AND OPERATING RULES

- B01 -Certificate privileges.
- B02 —Facilities and equipment.
- B03 —Performance standards.
- B04 —Records.
- B05 —Pack sealing.
- B06 —Parachute repair.
- B07 —Parachute alteration.
- B08 —Intentional parachute jumping.

FAA FLIGHT STANDARDS DISTRICT OFFICES

ALABAMA

FSDO 67B
Municipal Airport
FSS/WB Building
6500 43rd Avenue North
Birmingham, AL 35206
Phone: (205) 254-1557

ALASKA

FSDO 61
3788 University Avenue
Fairbanks, AK 99701
Phone: (907) 474-4276

FSDO 62
A.I.R. Center Building
9610 Shell Simmons Drive
Juneau, AK 99803
Phone: (907) 789-0231

FSDO 63
6601 South Airpark Place
Suite 216
Anchorage, AK 99502
Phone: (907) 243-1902

ARIZONA

FSDO 7
Scottsdale Municipal Airport
15041 North Airport Drive
Scottsdale, AZ 85260
Phone: (602) 241-2561

ARKANSAS

FSDO 65
Adams Field
FAA Building, Room 201
Little Rock, AR 72202
Phone: (501) 378-5565

CALIFORNIA

FSW 1
Van Nuys Airport
Suite 316
7120 Hayvenhurst Avenue
Van Nuys, CA 91406
Phone: (818) 904-6291

FAA REGIONAL OFFICES (CONTINUED)

SOUTHWEST REGION

4400 Blue Mound Road
Fort Worth, Texas 76101
Mail: P.O. Box 1689 Tel. 817-877-2000

AREA: Arkansas, Louisiana, New Mexico, Oklahoma, Texas

EASTERN REGION

JFK International Airport
Federal Building
Jamaica, New York 11430
Tel. 718-917-1005

AREA: Delaware, District of Columbia, Maryland, New Jersey,
New York, Pennsylvania, Virginia, and West Virginia

NORTHWEST MOUNTAIN REGION

17900 Pacific Hwy South, C-68966
Seattle, Washington 98168
Tel. 206-431-2001

AREA: Alaska, California, Colorado, Idaho, Montana, Oregon,
Utah, Washington, Wyoming

WESTERN PACIFIC REGION

15000 Aviation Boulevard
Hawthorne, California 90009
Mail: P.O. Box 92007
Worldway Postal Center
Los Angeles, California 90009
Tel. 213-297-1427

AREA: American Samoa, Arizona, California, Guam, Hawaii,
Japan, Nevada, and Marshall Islands

C. PACKING PARACHUTES

CO1 -Requirements.
CO2—Preparation.
CO3—Inspection.
CO4—Folding and stowing.
CO5—Closing, finishing, and sealing.

D. PARACHUTE OPERATION AND CARE

DO1 -Function of parts and assemblies.
DO2—Handling and storage.
DO3—Airing and drying.
DO4—Safety practices.
DO5—Forces acting on a parachute.

E. PARACHUTE CONSTRUCTION DETAILS

EO1 -Pilot parachute.
EO2 -Main canopy.
EO3 -Container.
EO4 -Release devices.
EO5 —Suspension lines.
EO6 -Harness.
EO7 -Parachute hardware.
EO8 -Parachute specifications.

F. PARACHUTE REPAIR

FO1 -Repair standards.
FO2 -Canopy repair.
FO3 -Harness repair.
FO4 -Miscellaneous repairs.
FO5 -Sewing and stitching.
FO6 —Sewing machines.
FO7 -Hardware repair.
FO8 -Cleaning parachutes.
FO9 -Container repair.

G. PARACHUTE ALTERATION

GO1 -Alteration standards.
GO2—Canopy alteration.
GO3—Harness alteration.
GO4—Hardware alteration.
GO5—Container alteration.

Practice Test

The practice test which follows is provided to familiarize you with the type of test questions **contained in the FAA** parachute rigger written tests. It is important to remember that the practice test does not cover all of the subjects **on which you will be tested. For this reason, you** should acquire knowledge in all the written test subjects, not just the answers to these few sample test questions.

Each question is followed by four suggested answers. In each case, **select the one that best answers the question and then blacken the corresponding space on the** "Practice Test Answer Sheet," which follows the practice test. Answers to the practice test also follow the practice test.

1. After packing a parachute Intended for emergency use in a civil aircraft, **a certificated parachute rigger shall enter which of the following on the packing record attached to the parachute?**

1—The parachute retirement date, packing date, and his/her signature.

2—His/her signature, date, and place of packing.

3—His/her certificate number, signature, the date and place of packing, and a notation of any defects found.

4—The date, his/her certificate number, seal symbol, and signature.

2. When packing a parachute, what determines the width of the canopy folds?

1—The width of the pack.

2—The diameter of the canopy.

3—The number of suspension line channels.

4—The width of the suspension line retainers.

3. What is the minimum period of time that an applicant for a senior parachute rigger certificate shall have served as a parachute rigger?

1—Two years.

2—Three years.

3—For at least 90 days within the preceding 12 months.

4—There is no minimum time specified.

FM REGIONAL OFFICES

ALASKAN REGION

701 c Street, Box 14
Anchorage, Alaska 99513
Tel. 907-271-5645

AREA: Alaska

GREAT LAKES REGION

O'Hare Lake Office Center
2300 East Devon Avenue
Des Plaines, Illinois 60018
Tel. 312-694-7000

AREA: Illinois, Indiana, Michigan, Minnesota, North Dakota, Ohio, South Dakota, Wisconsin

SOUTHERN REGION

3400 Norman Berry Drive
East Point, Georgia 30344
Mail: P.O. Box 20636
Atlanta, Georgia 30320
Tel. 404-763-7222

AREA: Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, Ohio, Puerto Rico, Republic of Panama, South Carolina, Tennessee, Virgin Islands

EUROPEAN OFFICE

15. Rue de la Loi (3rd floor)
B-1040 Brussels, Belgium
U.S. mailing address:
c/o American Embassy
APO, New York OS667
Tel. AUT 3145482225
Embassy Operator Commercial Telephone: (32-2)513.38.30

AREA: Europe, Africa, Middle East

CENTRAL REGION

601 East 12 Street
Federal Building
Kansas City, Missouri 64106
Tel. 816-374-5626

AREA: Iowa, Kansas, Missouri, Nebraska

NEW ENGLAND REGION

12 New England Executive Park
Burlington, Massachusetts 01803
Tel. 617-273-7244

AREA: Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont

4. When **laying** out a seat- or back-type parachute for packing, how should the harness be placed with reference to body position of the wearer?

- 1—~~Face~~ down with the head away from the canopy.
- 2—~~Face~~ up with the head away from the canopy.
- 3—~~Face~~ down with the head toward the canopy.
- 4—~~Face~~ up with the head toward the canopy.

5. How long should a parachute be aired prior to packing?

- 1—~~Allow~~ 1 hour of **airing** for each day the parachute was packed.
- 2—~~Four~~ hours, provided the parachute is not wet.
- 3—~~It~~ should be aired at least 8 hours.
- 4—~~Until~~ the parachute has been thoroughly **dried**.

6. Which of the **following** statements are true? (1) Filler yarns in the weave of parachute canopies extend lengthwise through the material. (2) When applying a patch, the patch material filler yarns must be matched with those of the canopy.

- 1—Only statement (1) **is** true.
- 2—~~Only~~ statement (2) is true.
- 3—~~Neither~~ statement (1) nor (2) is true.
- 4—~~Both~~ statements (1) and (2) are true.

7. Which component of the sewing machine used for parachute repair work prevents the thread from becoming tangled around the needle as it travels through the material?

- 1—The needle bar.
- 2—~~The~~ thread **takeup** level.
- 3—The thread controller spring.
- 4—The action of the sewing hook.

8. How long must a certificated parachute **rigger** retain a record of the packing, maintenance, or alterations performed or supervised by him/her?

1-At least 2 years after the date the work is completed.

2—At least 1 year after the date the work is performed.

3—At least 2 years after the date the parachute is disposed.

4—Until notified by the FAA that he/she may dispose of them.

9. After packing a parachute, how does a **certificated** parachute rigger seal each pack?

1-The safety **tie** is sealed with the parachute rigger's **individual** seal **in** accordance with the manufacturer's instructions.

2-The safety tie **is** sealed with the parachute loft seal in accordance **with** the manufacturer's recommendations.

3—The safety **tie** is sealed by **securing** the pack elastics **in** their respective positions.

4—The safety tie is sealed with the seal symbol issued by the parachute manufacturer.

10. In addition to meeting the experience requirements, what other requirements must be met by a member of the United States military who applies for a senior parachute rigger certificate?

1—Pass an oral and practical test.

2—Pass a written test with respect to parachutes in common use.

3—Present evidence to the FAA that he/she holds the equivalent military rating.

4—Pass a written test on the FAR's

11. According to FAR Part 65, when exercising certificate privileges, a parachute rigger must have available suitable housing that is adequately heated, lighted, ventilated,

1-and is high enough to allow a parachute to be hung vertically for drying and airing.

2—and has provisions for adjusting and controlling the humidity.

3—for drying and airing parachutes.

4—and meets all the requirements specified in 1, 2, and 3 above.

Free AC's may be obtained by writing to:

U.S. Department of Transportation
Utilization and Storage Section, M-443.2
Washington, DC 20590

12. No certificated parachute rigger may **exercise** the privileges of his/her certificate and type rating unless he/she understands the current manufacturer's instructions, and has

1-performed duties under **his/her** certificate for at least 90 days within the preceding 12 months.

~~2—packed~~ at least 20 parachutes **within** the preceding 12 months.

~~3—performed~~ duties under his/her certificate within the preceding 90 days.

~~4—packed~~ at least 10 parachutes of each of two types in common use within the preceding 12 months.

13. FAR's require a certificated parachute rigger to keep a record of the packing, maintenance, or alteration of parachutes performed or supervised by him/her. Identify the following items required to be entered:

A — Retirement date of parachute.

B — Date parachute was manufactured.

C — Name and address of parachute owner.

D — Type and make of parachute and its serial number.

E — Date and place where the particular operation was performed.

~~1-A,~~ B, C.

~~2—B,~~ C, D.

3-C, D, E.

4-D, E, A.

14. When requested, a certificated parachute rigger is required to present his/her certificate to

1-the owner of a parachute the rigger has packed.

~~2—any~~ state or local law enforcement officer.

3-e person holding a master parachute rigger certificate.

4-a certificated pilot or flight instructor.

15. FAR's provide for the issuance of which type ratings for master parachute rigger?

1-Seat, special purpose, back, and lap.

~~2—Chest,~~ back, seat, and chair.

~~3—Lap,~~ chest, chair, and cargo.

~~4—Back,~~ lap, seat, and chest.

16. When **repairing** a broken **stitch** in a canopy seam, what **action** should be taken?

- 1-Anchor the ends of the broken thread using fabric cement.
- 2—~~Sew~~ back and forth across the ends of the broken stitch.
- 3—~~Reinforce~~ the seam by applying a patch.
- 4—~~Backstitch~~ for at least 1 inch.

17. What is the minimum period of **time** an applicant for a master parachute rigger certificate shall have served as a parachute rigger?

- 1-Two years.
- 2-Three years.
- 3—~~Four~~ years.
- 4—~~Five~~ years.

18. What determines the service life of a canopy?

- 1-The total number of repairs.
- 2-The number of times it has been packed.
- 3-The total number of times it has been used for jumping.
- 4—~~The~~ tensile strength and porosity of the material.

19. What is the purpose of a parachute seal symbol?

- 1—~~To~~ identify a certificated parachute rigger.
- 2—~~To~~ identify the parachute manufacturer.
- 3—~~To~~ indicate FAA approval of a parachute assembly.
- 4—~~To~~ identify parachute canopy material.

20. A certificated parachute rigger who applies for an additional type rating must pass which of the following tests?

- 1-A written test for the type rating sought.
- 2-A practical test for the type rating sought.
- 3—~~An~~ oral and practical test for the type rating sought.
- 4-A written and practical test for the type rating sought.

A variety of text and reference material is available from commercial publishers. Most public and institutional libraries maintain technical reference sections and can often recommend specific text books and authors. Manufacturers' instructional manuals are also a good source of technical material.

FAR's

The following FAR's should be useful to a person studying for the tests. A knowledge of the rules is often very helpful and sometimes necessary during the performance of parachute rigger duties.

- Part 1 Definitions and Abbreviations.
- Part 21 Certification Procedures for Products and Parts.
- Part 65 Certification: Airmen Other Than Flight Crewmembers.
- Part 91 General Operating and Flight Rules.
- Part 105 Parachute Jumping.
- Part 149 Parachute Lofts.

FAA Advisory Circulars

The FAA issues advisory circulars (AC's) to inform the aviation public in a systematic way of nonregulatory material of interest. AC's are ~~issued in a numbered-~~ subject system corresponding to the numbering system used for FAR's.

The AC's of greatest interest to parachute rigger applicants are:

- AC 00-2 Advisory Circular Checklist (and Status of Other FAA Publications). Provides a list of current FAA AC's (and certain other publications) and how to order them.
- AC 00-44 Status of Federal Aviation Regulations.
- AC 20-36 Index of Articles (Materials, Parts, Processes, and Appliances) Certified Under the Technical Standard Order System.

PERMANENT CERTIFICATE ISSUANCE

Permanent **certificates** are prepared and **issued** by the Airmen Certification Branch of the FAA and are mailed to the address shown on the application form. It usually takes about 8 weeks to process the application and issue the permanent certificate. In the meantime, you may **exercise** the privilege of a certificated parachute rigger using your temporary certificate.

PARACHUTE RIGGER SEAL SYMBOLS

When a **certificate** is first issued to a parachute rigger, the FAA assigns an identifying symbol for the parachute rigger's **exclusive** use in sealing parachute packs. Each parachute rigger must obtain his/her own seal press and a seal with his/her assigned symbol. Seals and seal presses are not available from the FAA. They can be purchased from the manufacturers or suppliers of parachutes and parachute equipment.

After a parachute is packed, a low-tensile-strength safety thread is usually wrapped and knotted about the release device in a manner specified by the parachute manufacturer, a lead seal is affixed to the thread and secured by impressing the parachute rigger's seal symbol into it. Any withdrawal of the release pins (or other release mechanism) will break the thread. As long as the safety thread and seal remain intact, it is an indication to the user that the pack has not been opened since being inspected and packed by a certificated parachute **rigger**.

RECOMMENDED STUDY MATERIALS

The publications listed in **this** section will be helpful as you prepare for the parachute rigger written test. However, they do not provide the total technical information required for certification. It is the responsibility of each applicant to obtain the study materials appropriate to his/her own needs.

EXAMPLE OF PRACTICE TEST ANSWER SHEET

↓	1	①	②	③	④	↓
	2	①	②	③	④	
	3	①	②	③	④	
	4	①	②	③	④	
	5	①	②	③	④	
	6	①	②	③	④	
	7	①	②	③	④	
	8	①	②	③	④	
	9	①	②	③	④	
	10	①	②	③	④	
	11	①	②	③	④	
	12	①	②	③	④	
	13	①	②	③	④	
	14	①	②	③	④	
	15	①	②	③	④	
	16	①	②	③	④	
	17	①	②	③	④	
	18	①	②	③	④	
	19	①	②	③	④	
	20	①	②	③	④	

ANSWERS TO PRACTICE TEST QUESTIONS

QUESTION NUMBER	ANSWER
1	3
2	1
3	4
4	3
5	4
6	2
7	3
8	1
9	1
10	4
11	3
12	1
13	3
14	2
15	4
16	4
17	2
18	4
19	1
20	2

- n. REPLACE A CANOPY GORE SECTION OR PANEL. You must select correct fabric and thread; match filler, warp, and **ripstop** boxes, as applicable; use correct stitching, overlap, edge distance, and over stitching; trim out damaged area; check suspension line freedom.
- o. REPLACE A SUSPENSION LINE. You must select correct thread and suspension line of the type **used** on the canopy; adjust length of replacement line to maintain canopy balance: attach line to canopy and **riser** link using correct stitching; check line continuity.

SCORING ORAL AND PRACTICAL TESTS

Oral and practical tests are graded as soon as they are completed. The tests are graded using a pass/fail concept, rather than a numerical score. If any part of the test is **failed**, the person administering the tests will record the results on the reverse side of FAA Form 8610-2 and return the duplicate to you. He/she will also return your AC Form 8080-2 or FAA Form 8060-4, whichever is applicable.

If you fail a test, you may apply for a retest as prescribed in FAR Section 65.19. You have the option of returning to the same FAA district office or DPRE, or applying to any other FAA district office or DPRE for the retest.

When all parts of the tests have been passed, the FAA district **office** or DPRE will issue a temporary parachute riggers certificate. The following excerpts from FAR Part 65 pertain to temporary certificates. "A certificate and ratings effective for a period of not more than 120 days may be issued to a qualified applicant, pending review of his/her application and supplementary documents and the issue of the certificate and ratings for which he/she applied."

- d. REPAIR A TORN RADIAL SEAM. You must select correct machine, thread fabric, or tape; use correct stitching, overlap, edge distance, and over stitching; trim out damaged area; check suspension line freedom.
- e. REPLACE F'OCKET BANDS OR V-TABS. You must select correct machine, thread, webbing; correctly position webbing; use correct stitching, stitch spacing, and over stitching.
- f. RESTITCH OR REPLACE PACK OPENING SPRING BANDS. You must use correct thread; hand tack the band in place with the required number and placement of stitches; tie-off thread properly.
- g. INSTALL SNAP FASTENERS ON A PARACHUTE PACK. You must select snaps of the correct type; punch or repair hold as applicable; check completed installation for security and operation.
- h. INSTALL GROMMETS. You must select grommet and washer of the correct type and size; punch or repair hold as applicable; check grommet for security.
- i. INSTALL LOCKING CONES ON A PARACHUTE PACK. You must select proper size and type of thread and cone of the same size and type as used on the pack; properly align, position, and stitch cone in place; tie off thread.
- j. INSTALL A SLIDE FASTENER. You must select proper size and type of thread and slide fasteners; use correct stitching; check completed installation for operation.
- k. INSTALL HOOK EYES ON A PARACHUTE PACK. You must select correct eye and thread; position eye and sew into place; tie off thread.
- l. OPERATE A STANDARD SEWING MACHINE. You must thread the machine and adjust it to produce an acceptable lockstitch.

Master Parachute Rigger Applicants Only

- m. REPAIR AN UPPER OR LOWER LATERAL BAND. You must select correct size and type tape and thread; use correct stitching, underfold, edge distance, spacing, and over stitching; splice reinforcing tape, as required.

ORAL AND PRACTICAL TESTS

Taking the Oral and Practical Tests

Completion of the oral and practical tests is usually the final step in becoming certificated or in **adding** a rating to a parachute rigger certificate. An oral and a **practical** test must be taken for each type rating issued during original certification (except in the case of military applicants for senior parachute **rigger** certificates). When ratings are added to a senior or master parachute rigger certificate, a practical test is required for each rating in addition to the experience requirement.

Oral and practical tests are administered by FAA inspectors or by FAA-designated parachute rigger examiners (**DPRE's**). The scope of the tests is the same, whether given by an inspector or by a DPRE. Arrangements for taking the oral and practical tests should be made in advance of the date on which you desire to take the test.

If an FAA inspector **gives** the oral and practical tests, the necessary facilities and equipment must be furnished or arranged for by the applicant. The applicant will be expected to furnish: (1) a smooth-top table, at least 3 feet wide by 40 feet long, (2) provisions for drying and airing parachutes, (3) manufacturer's instructions, and the tools and equipment used to pack and maintain the types of parachutes for which a rating is sought, and (4) adequate housing facilities to perform the duties of a parachute rigger and to protect the tools and equipment. At least one approved parachute of each type for which a rating is sought must be available for the oral and practical tests.

If a DPRE **gives** the oral and practical test, he/she **will** assure that suitable facilities and **equipment** are available to conduct the test. Since designated examiners are not **paid** by the FAA for their services or the use of their facilities and equipment, they are authorized to charge a fee for administering oral and practical tests.

The names and addresses of the FAA **DPRE's** in each district can be obtained from the FAA district office that serves the area.

You will be given an application form and instructions for filling it in by the person who administers the tests. He/she will explain the tasks that will be assigned during the test and will observe all aspects of your performance and grade you accordingly.

The oral test may be administered along with the practical test, or it may be given separately, before or after the practical test. The examiner will not attempt to trick or mislead you in any way with his/her oral questions or project assignments. Any questions or assignments that you do not understand should be clarified before answering the question or attempting the project.

Evaluating Your Performance

Your performance will be evaluated by the examiner on the basis of knowledge, accuracy, and proficiency displayed during the test. In evaluating performance the principle **characteristic** that will be considered is the quality of the end product. Other characteristics that will be considered include:

1. Your approach to the project -did you obtain, use, and correctly interpret information available to perform the task?
2. Your skill in handling tools and use of the proper tool for the assigned task.
3. The care you take in protecting parachute parts from damage during handling.
4. Your proficiency in **packing** and inspecting parachutes.
5. The manner in which you complete the required forms and records.
6. Your understanding and application of the **FAR's**.

- (3) **LAY OUT THE PARACHUTE.** You must lay out the parachute as prescribed in the packing Instructions, check the canopy for being right side out, check suspension lines for **continuity**, and remove tangles (if any).
- (4) **INSPECT THE PARACHUTE.** You must carefully check for conformity to the manufacturer's **description**, completeness of assembly, **operational** adequacy, **markings**, damage, deterioration, and other defects.
- (5) **FOLD AND STOW THE PARACHUTE.** You must pleat and fold the canopy gores, sign inside packing record, accordian fold the canopy into the pack, and fold and pack the pilot parachute.
- (6) **CLOSE, FINISH, AND SEAL THE PACK.** You must close the pack flaps in the correct sequence, insert the pack closing device, **finish** and smooth the pack, seal the pack, fasten the pack opening bands and protector flaps, and fill the parachute records.

2. MAINTAINING PARACHUTES

Senior Parachute Rigger and Master Parachute Rigger Applicants

- a. **RESTITCH CANOPY SEAMS.** You must select the correct sewing machine; use straight lockstitch or zigzag stitch, depending upon the area being restitched; use proper size, texture, and color thread; restitch following original construction, overstitch as required; and check suspension line freedom if restitching a radial seam.
- b. **DARN A SMALL SNAG OR TEAR.** You must select proper size, texture, and color thread; use **tiny** stitches at rightangles to the damage and extend the darning beyond the area. Canopy material should not be puckered.
- c. **PATCH A CANOPY SECTION.** You must select correct machine, fabric, and thread; match filler, warp, and **ripstop** boxes, as applicable; use correct stitching, overlap, edge distance, and overstitching; trim out damaged area; check suspension line freedom, if stitching on a radial seam.

59. What thread size should be used to sew canopy radial seams when making a repair?
60. How is the needle-thread tension and the bobbin-thread tension on a sewing machine usually controlled?

Practical Test Projects

The practical test consists of assigned work projects to test your mechanical skill and ability to organize work, select and follow correct procedures, apply appropriate techniques, and determine an acceptable level of workmanship. The person administering the test will select projects that utilize, as much as possible, the equipment and procedures that are familiar to you.

If a project must be performed in accordance with a manufacturer's instructions or other data, the examiner will expect you to consult the instructions or data. Failure to do so may result in your failing the practical test.

A list of the projects you can expect to be assigned during the practical test is shown below. You will be required to perform all of the tasks involved in packing parachutes, and may be assigned all or only part of the projects listed under Maintaining Parachutes. Since master parachute riggers are permitted to make major repairs and alterations, and to supervise other persons performing these operations, master parachute rigger tests will be more extensive than the tests given a senior parachute rigger applicant.

1. PACKING PARACHUTES

a. PACK A PARACHUTE.

- (1) IDENTIFY AND SELECT TOOLS, EQUIPMENT, AND TECHNICAL INFORMATION. You must select the correct tools, equipment, and manuals.
- (2) OPEN THE PACK. You must take precautions to avoid damage to the parachute, check the ripcord pull force.

Oral Test Questions

Oral test questions cover the same subjects as the written tests and are intended to show how well you can make use of your knowledge. The oral test questions fall generally into three types: (1) questions closely related to assigned projects -to further explore your understanding of the tasks being performed, (2) questions not related to a specific project -to evaluate your ability in areas in which a skill demonstration is not practical, and (3) questions to determine whether additional projects need to be assigned. The following list of questions may be helpful for reviewing the results of your study. Many of them may suggest other areas for additional study.

A. PACKING PARACHUTES

1. What general sequence of operations is followed when packing a parachute?
2. How can the correct procedure for packing a parachute be determined?
3. What sequence of operations is normally followed to remove twists and tangles from a parachute canopy, suspension lines, and harness?
4. In what position would an attached harness be when a parachute is laid out for packing?
5. During the preparation of a parachute for packing, when is the skirt hem of a canopy usually straightened?
6. What determines the width of the canopy folds when packing a parachute?
7. How can the order of stowing lines in the line holders be determined.
 - a. How is a parachute pack usually sealed after being packed?
9. What is the purpose of temporary locking pins used during parachute packing?
10. What type of safety tie is used when sealing a packed parachute?

11. Name some packing practices which could contribute to a delay in pilot parachute ejection.
12. What information is given on the stamped panel of a canopy?
13. What type of knot is used to secure the pilot parachute to the canopy apex?
14. What is the reason for disconnecting the apex of the parachute from the packing table tension device during packing?
15. What are the reasons for using a ripcord housing and having it properly attached to the pack and harness?
16. How are the suspension lines attached to the riser links?
17. What are packopening elastics or spring bands?
18. What is the purpose of the safety thread and lead seal used to seal a packed parachute?
19. To which pin of a ripcord is the seal attached?
20. What is the maximum permitted ripcord pull force?
21. How does a certificated parachute rigger identify his/her work or packing?
22. Which pin of a ripcord is number one?
23. What method is effective to temporarily shorten the suspension lines of an unpacked parachute to prevent tangling of the lines?
24. What are the requirements for drying and airing parachutes prior to packing?
25. What types of pilot parachutes are in common use?
26. What is the purpose of the suspension line loops in a parachute pack assembly?
27. How are the release pins of a ripcord normally attached to the cable?
28. What action should be taken if a flaw is discovered in a parachute canopy during inspection for packing?
44. What procedures must be followed when repairing a parachute?
45. Who may alter the main parachute of a dual parachute pack?
46. What is likely to occur while operating a sewing machine if the bobbin is threaded incorrectly?
47. What sewing machine malfunction can cause staggered stitches?
48. What procedure should be followed when repairing broken stitches in a canopy seam?
49. What determines the service life of a nylon canopy?
50. What is the purpose for using zigzag stitching to complete the attachment of suspension lines to the riser links?
51. How can sunlight damage to white nylon fabric be identified?
52. When replacing a damaged ripcord with a serviceable one, what requirements must be met?
53. When replacing a pack grommet that has torn out of its fastening, what should be done to keep the locking pin from binding in the cone?
54. What is the reason for matching the weave of the patch material with that of the canopy being repaired?
55. What precautions should be observed when replacing a broken or missing eye on a parachute container?
56. Describe the appearance of the material defect known as a "warp float."
57. What effect would a bent grommet have on the operation of the pack-opening mechanism?
58. What action should be taken if "yarn slippage" is detected in a parachute canopy during the inspection?

26. How can a bent or burred ripcord pin be repaired?
27. What is the danger in chrome plating parachute hardware?
28. What agents can be used to clean parachute harnesses?
29. Explain the difference in the construction of a bias-constructed parachute and a straight-constructed one?
30. What process is used on the ends of harness webbing to prevent fraying?
31. What type of knot may be used to secure harness tacking if no particular knot is specified?
32. What can result if the ripcord handle pocket is improperly positioned?
33. Why is an acid stain more serious than any other type of stain on a parachute?
34. What should be done with a parachute canopy that has a large acid-stained area?
35. How should a parachute be dried after it has been rinsed or soaked in water?
36. What action is necessary when a parachute has been stained with perspiration?
37. What chemicals can be used to prevent a parachute from mildewing?
38. Why should the elasticity of a seam be greater than that of the material it joins?
39. Who is privileged to perform major repairs to a parachute assembly?
40. What guide for details could be followed in performing a minor repair to a parachute?
41. What action should be taken first when laying out a parachute canopy repair patch?
42. How should a tear in a canopy be prepared for patching?
43. What is the minimum distance that the raw edges of a canopy patch must be turned under?

29. After stretching a parachute to its full length on the packing table, what is the next step that should be taken?
30. During the packing operation, why is some canopy material allowed to extend beyond the pack edges?
31. In completing the packing process, what tool is used to insert the protector flaps?
32. What may result if the ripcord handle is improperly positioned?
33. After stowing the suspension lines, where is the skirt of the canopy placed?
34. What is the function of the canopy vent, and what do you look for when inspecting it?
35. How can the serviceability of a parachute be determined if the strength of the canopy material is in question?
36. How can the presence of acid in a parachute stain be detected?
37. What is meant by the term "tensile strength" of a material, and how can it be determined?
38. How can the presence of mold or mildew be detected in parachute canopy materials?
39. What is the last step in packing a parachute?
40. What are some of the reasons for condemning a parachute harness?
41. How is the length of a ripcord measured?
42. What are the minimum facilities and equipment a parachute rigger must have available to exercise his/her privileges?
43. What records of parachute packing, maintenance, and alteration are required to be kept by a parachute rigger.
44. What information is required to be entered on the parachute packing record attached to the parachute?
45. How long must parachute packing, maintenance, and alteration records be kept?

46. What kind of knot is usually used to tie-off harness tacking?
47. How much free line is left between the skirt hem and the line stowage loops or elastics?
48. What is the function of a pilot parachute?
49. What requirements must a certificated parachute rigger meet in order to pack the main parachute of a dual parachute pack to be used for Intentional jumping?
50. How can the correct method of sealing a parachute pack be determined?

B. MAINTAINING PARACHUTES

1. Where is the manufacturer's identification data usually located on a parachute canopy, on a harness, and on a pack?
2. What is the function of the ripcord housing?
3. How is a parachute usually prepared for an extended storage period?
4. What is the meaning of the term "bias construction" as used to describe a parachute canopy?
5. How are the skirt and vent hems of most parachutes reinforced?
6. What is the usual number of stitches per inch used in making the seams of a parachute canopy?
7. How is the ripcord handle held, or secured to the harness of a back- or seat-type parachute so that it is readily accessible to the wearer, yet relatively safe from accidental release?
 - a. How are most types of snap fasteners and grommets attached to parachute material?
9. How can the correct procedures for repairing a parachute be determined?
10. How are small holes and snags in a parachute canopy usually repaired?

11. What kind of textile material is used to make a parachute canopy repair?
12. What identifying features are associated with "yard slippage" in parachute canopy materials.
13. What are the common stitching patterns to attach load-bearing rings and snaps to parachute harnesses?
14. How is uniformity of length of nylon suspension lines assured during manufacture of a parachute, or the replacement of lines?
15. How would a parachute rigger determine the correct number of stitches per inch used for a parachute repair?
16. How would a parachute rigger determine the correct type of seam used for repairing a parachute?
17. What are the characteristics of a properly formed seam?
18. What type of stitch is normally used during the construction and repair of parachutes?
19. What kind of stitch is normally used to secure the suspension lines to the canopy skirt and vent hems?
20. What are the operating principles of the rotary type and oscillating type sewing machines?
21. What factors should be considered when selecting the correct size sewing machine needle to be used for making a repair?
22. What are the characteristics of a sewed lockstitch made by a correctly adjusted sewing machine?
23. What precautions should be observed if load-carrying parachute hardware is refinished or replated?
24. What methods and cleaning products are generally used in cleaning parachute canopy materials?
25. Why is it necessary to stitch the suspension line where it attaches to the riser link?